USSR

GRISHUKHIN, V. P., Mat. metody resheniya ekon. zadach, No 3, "Nauka", 1972, pp 93-105

$$C_{n+1}^{\left[\frac{n+1}{2}\right]} < \chi(n) < 5 C_n^{\left[\frac{n}{2}\right]}.$$

Zh. Ansel' (Kibern. sbornik, vyp. 5, Moscow, "Mir", 1968) showed that $\chi(n) = C_{n+1}^{\left[\frac{n+1}{2}\right]}$. This result is compared with the number of checks for admissability of the plan in the Balash algorithm.

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GRISHUKHIN, V. P.

"The Mean Number of Iterations of a Balash Algorithm"

Issled. po diskretnoy mat. [Studies in Discrete Mathematics -- Collection of Works], Moscow, Nauka Press, 1973, pp 58-68 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V512 by Yu. Finkel'shteyn)

Translation: An integer programming problem is studied (problem p)

$$\sum_{j=1}^{n} c_j x_j \rightarrow \text{min},$$

$$\sum_{j=1}^{n} A_j x_j \geqslant B, \quad (A_j, B \in R^m),$$

$$x_j = 0 \quad \text{или} \quad 1, \quad j = 1, \ldots, n.$$

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GRISHUKHIN, V. P., Issled. po diskretnoy mat., Moscow, Nauka Press, 1973, pp 58-68

Here A_j,B are m-dimensional vectors with components a_{ij}, b_i, number c_j and vectors A_j,B correspond to a certain point in space R^n R^{nm} $R^m = R^{(n+1)(m+1)-1}$, and vice versa: any vector $z \in R^{nm+n+m}$ corresponds to the coefficients of a certain problem p, if we write z in the form of $z = (C, A, B)$, where $C = (c_1, \ldots, c_n)$ R^n, $A = (a_1, \ldots, A_n)$ R^{nm}, $B \in R^m$.

Thus, between problems p and points R^{n+mn+m} there is a mutually unambiguous correspondence. Further R^{n+nm+m} is studied with ordinary Euclidean metrics and the set of problems dp is assigned the measure

$$\mu(dp) = \prod_{j \in N} \sum_{i \in M} dc_j da_{ij} db_i,$$

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GRISHUKHIN, V. P., Issled, po diskretnoy mat., Moscow, Nauka Press, 1973, pp 58-68

where N= 1,2, ..., n , M= 1,2, ..., m . Further, certain areas in space R^{n+nm+m} are studied, the measure of which is their volume. The set of problems corresponding to a certain area G is called by the author problem class p_G. For a certain function f(p) in problems from class p_G, the mean for the class is defined

$$f_G = \frac{1}{|G|} \int f(p)\, \mu\,(dp),$$

where $|G|$ is the volume of area G. Further, only one function (p) is studied -- the number of steps in the Balash algorithm. This function was introduced in a work by the author (RZIMat, 1973, 5V652); this same work studied area G, fixed by the inequalities

$$c_j > \sum_{j'=j+1}^{n} c_{j'} \geq 0 \quad \text{for all } j \in N,$$

$$A_1 > A_2 > \cdots > A_n;$$

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GRISHUKHIN, V. P., Issled. po diskretnoy mat., Moscow, Nauka Press, 1973, pp 58-68

is shown that $\phi(p)$ in the class of problems corresponding to this area (and called $P_C(n)$) is independent of vector $C=(c_1, \ldots, c_n)$ and satisfies certain equations. Further, the mean $\bar{\phi}_G(A,c)$ is studied, where $G(A,c)$ is the area

of G limited by the conditions $A_1 \leqslant A$, $A_n \geqslant 0$, $0 \leqslant B \leqslant \sum_{1}^{n} A_j$. Here c is a number, while $A=(a_1, \ldots, a_m)$ is a vector. We note th 1
while $A=(a_1, \ldots, a_m)$ is a vector. We note that $G(a,c)-G(A) G(c)$, and since (p) is independent of c, $\bar{\phi}_{G(A,c)} = \bar{\phi}_{G(A)}$. It is shown that $\bar{\phi}_{G(A)}$ is independent of A, so that we can write $\bar{\phi}_{G(A)} = \bar{\phi}_m^n$. After rather cumbersome calculations, it is shown that

$$\bar{\phi}_m^n = \frac{3m}{n^2} 2^{n-m+1}\left(1 + O\left(\frac{1}{n}\right)\right).$$

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GRISHUKHIN, V. P., Issled. po diskretnoy mat., Moscow, Nauka Press, 1973, pp 58-68

This formula gives us the behavior of $\bar{\phi}_m^{-n}$ as $n \to \infty$ with fixed m. It is further shown that

$$\bar{\phi}(n) = \lim_{m \to \infty} \bar{\phi}_m^n = n + 1.$$

in (RZHMat, 1973, 5V652) it was found that

$$\phi(n) = \sup_{P \in P_C(n)} \phi(p) = C_n^{\left[\frac{n}{2}\right]} + C_{n-1}^{\left[\frac{n}{2}\right]} = \frac{3}{\sqrt{2\pi n}} 2^n \left(1 + O\left(\frac{1}{n}\right)\right).$$

Thus, the mean number of iterations of the Balash algorithm in area $P_C(n)$ (like the maximum) increases exponentially with increasing number of variables

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GRISHUKHIN, V. P., Issled. po diskretnoy mat., Moscow, Nauka Press, 1973, pp 58-68

n (with fixed m). If n is fixed, as m increases this mean exponentially approaches the limit (m+1). The author shows that the "exponential dependence of the mean number of iterations of the Balash algorithm on n in area $P_C(n)$ results completely from the fact that it does not consider the goal function." In order to prove this statement, he analyzes algorithm B_1 from (RZHMat, 1973, 5V652), which has a very simple rule for selection of j, namely $j_s = \min_{j \in N_k^{s-1}}$ (and the goal function is not considered). Then, calculating the

mean $\bar{\phi}_m^n(B_1)$ in the area

$$G = \left\{ 0 \leqslant A_l \leqslant A, \quad l \in N, \quad 0 \leqslant B \leqslant \sum_{j=1}^{n} A_j \right\}$$

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GRISHUKHIN, V. P., Issled, po diskretnoy mat., Moscow, Nauka Press, 1973, pp 58-68

as was done above, we can see that

$$\sum_{j=1}^{m} |L_j - L|,$$

where

$$L_j = l_j + \sum_{i=1}^{n} a_i x_{ij}, \quad L = \frac{1}{m}\left(\sum_{j=1}^{m} l_j + \sum_{i=1}^{n} a_i\right).$$

The final conclusion of the author: in order to essentially reduce the number of iterations for problems with large numbers of variables, estimates based on the goal function must be used.

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USSR   UDC [537.226+537.311.33]:[537*539]

ANNENKOV, YU. M., and GRISHUKOV, V. A.

"Electrical Properties of Crystals of Solid Solutions of Alkali-Halide Com-
pounds of KCl-KBr System"

Izv. Tomsk. politekhn. in-ta (News of Tomsk Polytechnic Institute), 1971,
180, pp 164-166 (from Kh-Fizika, No 1, Jan 72, Abstract No 1YE1326 by P. V.
MEYKLYAR)

Translation: Electrical conductivity σ and dielectric loss ($tg\ \delta$) were deter-
mined using KCl-KBr single crystals with a varying ratio of components. σ
declines with an increase of KBr concentration. The introduction of KCl causes
a sharp drop in σ, especially in KCl even with a low KBr concentration. For
OH⁻-doped crystals, an increase of KBr concentration in KCl even causes an
increase in σ. The dependence of σ on the salt composition is determined by
the presence of an admixture of bivalent cations, the concentration of which
is greater in KCl than in KBr. The OH⁻ ions bond the bivalent cations; this
also causes a decline in σ, which is most marked in KCl. The character of the
variation of $tg\ \delta$ with the composition of the crystals is similar to the varia-
tion of σ.

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USSR   UDC 537:226+537:311:33]:[537+535

GRISHUKOV, V. A.

"Influence of Conditions of Measurement and Electrodes on Values of
Electrical Characteristics of Solid Solution in the KCl-KBr System"

Izv. Tomsk. politekhn. in-ta, [News of Tomsk Polytechnical Institute],
No 184, 1970, pp 24-30, (Translated from Referativnyy Zhurnal Fizika,
No 10, 1970, Abstract No 10 Ye 740).

Translation: The influence of the material of electrodes and method of
their application on the value of tan δ and the electrical conductivity
(σ) of solid solutions in the KCl-KBr system is determined. From the point
of view of results, Pt electrodes plated by cathode
sputtering are the best. The influence of atmospheric moisture on the value
of tan δ and σ of solid solutions of various compositions is studied.

1/1

USSR   UDC: 536.24

TSARS, A. A. and GRISLIS, V. YA., Physico-Energetic Institute of the Latvian Academy
of Sciences (Fiziko-energeticheskiy institut AN Latv. SSR)

"Heat Transfer During Vibration of a Surface in Viscous Fluids"

Abstract: The authors study heat transfer from vertically located tubes brought
into oscillatory motion at a frequency of up to 15 cps and an amplitude of $2\ a = 5 \div 15$
mm. In this instance water, transformer oil, and MS-20 grade oil are used as heat-
transfer agents. It is shown that change in the physical properties of fluids
within the given limits of vibration can be considered using Prandtl's criterion
at a power of 0.45 while the heat flux direction can be considered by using the
following ratio:

$$\left(\frac{Pr_f}{Pr_{wt}} \right)^{0.085}$$ for a laminar flow ($Re_f \cdot 1.5 - 735$) of the basic flux.

Heat-transfer during vibration does not depend on the parameters of a natural con-
vection within the limits of variation of the complex $GrPr = 4 \cdot 10^6 - 7 \cdot 10^8$.   An ex-
pression for calculating heat transfer is given.

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1/2   037   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--HEAT EMISSION AT SURFACE VIBRATION IN VISCOUS LIQUIDS -U-

AUTHOR-(02)-TSARS, A.A., GRISLIS, V.YA.

CCUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS FIZ. TEHN. SER. (USSR), NO. 1, P.
  91-4 (1970)
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--WATER, TRANSFORMER OIL, MATHEMATIC EXPRESSION, HEAT LOSS, HEAT
  TRANSFER FLUID, PIPE/(U)MC20 HEAT TRANSFER FLUID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1823   STEP NO--UR/0371/70/000/001/0091/0094

CIRC ACCESSION NO--AP0122153
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0122153
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEAT EMISSION OF VERTICALLY
   ORIENTED PIPES VIBRATING AT A FREQUENCY OF 15 HZ. AND A 2A EQUALS 5 PLUS
   15 MM AMPLITUDE IS CONSIDERED. WATER, TRANSFORMER OIL AND OIL MC-20 ARE
   USED AS HEAT CARRIERS. AT LAMINAR FLOW OF THE MAIN CURRENT THE CHANGES
   IN THE PHYSICAL PROPERTIES OF THE LIQUIDS ARE FOUND TO DEPEND ON
   PRANDTL'S CRITERION, WHEREAS THE DIRECTION OF THE HEAT CURRENT, ON THE
   RELATIONSHIP (PR SUBM-PR SUBCM) PRIMEO.085. AN EMPIRIC EQUATION FOR
   CALCUALTING THE HEAT EMISSION IS SUGGESTED.

UNCLASSIFIED

USSR   UDC 543.545:546.65:539.173.8

GVOZDEV, B. A., GRITCHENKO, Z. G., MAKAROVA, T. P., OGANESYAN, Yu. Ts., and
STEPANOV, A. V.

"Use of the Electromigration Method in Studying the Yields of Certain Rare-
Earth Elements in the Reactions $U(^{12}C, f)$, $U(^{22}Ne, f)$ and $U(^{40}Ar, f)$"

Abstract: Fission reactions of the nuclei of heavy ions are important 1) in
the theoretical treatment of the fission of strongly excited nuclei, and 2)
in the practical synthesis of new elements and isotopes.

A thick target ($\sim$20 mg/cm^2 U_3O_8) was irradiated for several hours with the
inner beam of the 300 cm cyclotron of the Laboratory of Nuclear Physics,
United Institute of Nuclear Research, with ^{12}C, ^{22}Ne or ^{40}Ar (energies of
$\sim$110, 190 and 350 Mev, respectively); after which the irradiated target was
dissolved in HNO_3, and addition of a carrier of $\sim$50-100 μg La^{3+}, the La and
rare earth fluorides were precipitated. The latter was transformed into
hydroxides in 7.5 N HCl, the resulting solution was passed through a column
filled with the anion exchanger Dauex-1 in Cl^--form to remove tetravalent
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elements captured by LaF_3. The filtrate, containing all the rare earths and the tetravelent actinides, was heated to dryness, then separated by the electromigration method, with use of ordinary electrophoretic equipment. Relative yields of La, Ce, Pr, Nd, Pm, Sm, Eu and Gd isotopes, resulting from uranium fission by C, Ne and Ar ions, were measured. Tabular data accompany the paper.

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1/2   023   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--UPTAKE BY ALGAE AND PLANKTON OF NATURAL AND ARTIFICAL RADIONUCLIDES
   IN THE OCEAN -U-
AUTHOR-(03)-BARINOV, G.V., BLINOV, M.V., GRITCHENKO, Z.G.

COUNTRY OF INFO--USSR

SOURCE--(AEC-TR-7128, PP 59-61) TRANSLATED FROM REPORT A-AC-82-G-L-1254

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, EARTH SCIENCES AND
   OCEANOGRAPHY
TOPIC TAGS--OCEAN RADIOACTIVITY, THORIUM ISOTOPE, RADIOACTIVITY
   MEASUREMENT, ALGAE, PLANKTON, SEAWEED

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1768   STEP NO--UR/0000/70/000/000/0059/0061

CIRC ACCESSION NO--AT0054606
                        UNCLASSIFIED

CIRC ACCESSION NO--AT0054606
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEAWEED, SARGASSUM, WAS
  COLLECTED IN THE CARIBBEAN, THE GULF OF MEXICO, AND THE SARGASSO SEA AND
  ANALYZED FOR PRIME234 TH; THE CONCENTRATION FACTOR WAS FOUND TO BE
  1.104.   GREEN ALGAE WERE ALSO FOUND TO BE CONCENTRATORS OF PRIME234 TH
  WITH A CONCENTRATION FACTOR OF R TIMES 10 PRIME5.   THE ABILITY OF GREEN
  ALGAE TO ACCUMULATE PRIME234 TH SELECTIVELY WAS USED TO DEVELOP A METHOD
  OF DETERMINING THE PRIME234 TH CONTENT OF SEA AND OCEAN SURFACE WATERS.
  ZOOPLANKTON COLLECTED IN THE MURUROA ATOLL REGION CONTAINED APPRECIABLE
  QUANTITIES OF PRIME95 ZR, PRIME95 NB, PRIME103 RU, PRIME141 CE, AND
  PRIME144 CE.   THE ROLE OF ZOOPLANKTON AS BIOLOGICAL INDICATORS OF THE
  PRESENCE OF ARTIFICIAL RADIONUCLIDES IN SEA WATER WAS POINTED OUT.
    FACILITY: GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIYU ATOMNOI ENERGII
  SSSR, MOSCOW.

UNCLASSIFIED

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USSR

ALABUZHEV, P. M., GALYNIN, N. A., GERNER, I. I., GRITCHIN, A. A., ZUYEV, A. K., NIKITIN, A. A., KHON, V. F., Novosibirsk Electrical Engineering Institute

"A Seismic Receiver"

Translation: This Author's Certificate introduces a seismic receiver which contains a housing, an inertial mass and a displacement registering device. As a distinguishing feature of the patent, the sensitivity of the receiver is improved and the measurement range is extended by suspending the inertial mass on two preformed flat elastic strips which are securely fastened by their ends to the housing. The strips are securely fastened in the middle above and below to the inertial mass, and regulating screws press against the end faces of the strips.

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USSR   UDC: 621.317.755(088.8)

GRITSAK, D. I., GUDYK, V. I., KHALAVKA, I. I., SHTOYKO, L. V.

"A Device for Intensifying the Beam of a Cathode Ray Tube"

USSR Author's Certificate No 278798, filed 29 Apr 69, published 8 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A312 P)

Translation: This Author's Certificate introduces a device for intensi-
fying the beam of a CRT tube. The device contains a tunnel diode flip-flop,
transistorized amplifier and emitter follower with a diode shunting the
base-emitter junction. As a distinguishing feature of the patent, delay
of the positive front of the output pulse is reduced by connecting the
output of the tunnel diode flip-flop to the base of an additional transistor
with common emitter, the collector of this transistor being connected to
the base of the amplification transistor. The base of the amplification
transistor is also connected to the collector of a second additional tran-
sistor of opposite conductivity type. The base of this transistor is con-
nected through diodes, resistors and capacitors to the input of the device
and to the collector of the amplification transistor.

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Translation: This Author's Certificate introduces a device for protecting the grid -cathode space of a radio tube from overload by negative voltage. The device contains a neon tube, a limiting resistor and a transistor. To reduce the inverse voltage across the grid-cathode space of the tube, one of the leads of the neon tube is connected to the control grid of the tube to be protected and the other lead is connected through the collector-emitter junction of the transistor directly to the tube of the plate, and through the collector-base junction of the transistor to the centertape of a resistive voltage divider for the positive supply voltage. The collector of the transistor is connected to the common grounding bus through a resistor. Resumé.

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1/2   019   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--KINETICS OF CHLORINE DIOXIDE FORMATION AND CONSUMPTION DURING THE
  THERMAL GAS PHASE DECOMPOSITION OF PERCHLORIC ACID -U-
AUTHOR-(02)-GRITSAN, V.I., PANIFILOV, V.N.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(1), 235-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON PARAMAGNETIC RESONANCE, CHEMICAL REACTION RATE,
  PERCHLORIC ACID, OXIDE, THERMAL DECOMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0759   STEP NO--UR/0195/70/011/001/0235/0238

CIRC ACCESSION NO--AP0107301
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0107301
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE RATE OF ClO_2 FORMATION
   DURING A GASEOUS PHASE THERMAL DECOMPN. OF $HClO_4$ AT 230-440DEGREES
   WAS DETD. BY USING EPR. ClO_2 IS AN INTERMEDIATE IN $CHLO_4$
   DECOMPN. AND RATE CONSTS. OF ITS FORMATION FROM $HClO_4$ AND ITS
   DECOMPN. TO THE FINAL PRODUCTS ARE: AT 440DEGREES, 8.5 AND 79 SEC
   NEGATIVE1, RESP.   AT 350-400DEGREES, THE RATE CONST. (K SUB1) OF ClO
   SUB2 FORMATION IS: K SUB1 EQUALS 5.8 TIMES 10 PRIME13 EXP(NEGATIVE
   45,000-RT) SEC PRIME NEGATIVE1.   AT 200-350DEGREES, THIS REACTION
   DEPENDS GREATLY ON THE SURFACE NATURE OF THE REACTION VESSEL.

USSR   UDC 539.293

KRUTSILO, I. K., MIROSHNICHENKO, F. D., GRITSAY, F. Ye., MOROZOV, V. N.,
Zaporozh'ye State University

"Magnetostriction of Porous Nickel Films"

Abstract: The magnetostriction of porous cermet nickel films was inves-
tigated.   In the opinion of the authors there has been insufficient
attention given to magnetic studies of these materials, although one
should expect original magnetic properties in such materials, with their
unusual internal structure. The material used was PNK-1 industrial
carbonyl nickel powder. After rolling, the tape obtained was baked in
a protective atmosphere of dissociated ammonia for 30 min. Films with
a porosity of 8, 22, 23, and 34% were obtained after rolling, since the
centering was done at different specific pressures. Samples of dimen-
sions $6 \times 30 \text{ mm}^2$ were cut from these films; samples with a porosity of
8% had a thickness of 0.25, those with a porosity of 22% had a thickness of

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KRUTSILO, I. K., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No. 7, 1972, pp 141-143

0.11, those with a porosity of 23% had a thickness of 0.1, and those with a porosity of 34% had a thickness of 0.14 mm. The magnetostriction of the samples was measured by the opticomechanical method with a sensitivity of $1.1 \cdot 10^{-6}$ mm^{-1}. A new form of magnetostriction was observed in the film. As distinct from compact nickel, this magnetostriction is positive, being unsaturated in fields up to 1400 oe, and it exceeds λ_s of nickel by several factors. The existence of magnetocharge and positive tensomagnetostriction was shown in the samples. It was also shown experimentally that the magnetostriction of fabricated parts depends not only on the λ_s of the material but also on the mutual position and configuration of these parts.

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USSR

UDC 547.26'118

VATAMANYUK, N. M., TURKEVICH, V. V., GRITSAY, N. I., and VAS'KOV, A. P.,
Lvov Forestry Technology Institute and Lvov State University Imeni Ivan
Franko

"Selenothiophosphoric Acid Esters. VI. Alkylthiomethyl Esters of
O,O-Diphenylselenothiophosphoric Acid"

Abstract: The reaction of the potassium salt of O,O-diphenylselenothio-
phosphoric acid with α-chloromethylallylthioesters goes in two directions,
forming a mixture of thione and thiol isomers.

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UDC 547.26'118

USSR

ZEMLYANSKIY, N. I., VIL'DANOVA, G. G., GRITSAY, N. L., TURKEVICH, V. V., Lvov State University imeni Ivan Franko, Lvov, Ministry of Higher and Secondary Specialized Education Ukrainian SSR

"Reactions of O,O-Diphenyldithiophosphoric Acid Salts With Diazonium Salts"

Abstract: It is reported that the potassium salt of O,O-diphenyldithiophosphoric acid reacts with aryl diazonium salts in aqueous medium to yield orange and red colored solid products. They decompose slowly on standing and faster in acetone solution when heated. Heated in dry state they explode. For example, to obtain O,O-diphenyl-S-p-nitrophenyldiazonium dithiophosphate, potassium O,O-diphenyldithiophosphate dissolved in water was added to a diazonium salt solution prepared from nitroaniline, concentrated HCl, and sodium nitrite in an acetate buffer solution. The reaction mixture was kept at pH 7-8. The precipitated product was washed
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and dried; its m.p. is 50° (decomposes). Diazonium solution based on p-aminobenzoic acid reacted with potassium O,O-diphenyldithio-phosphate gave O,O-diphenyl-S-p-carboxyphenyldiazonium dithiophos-phate, temp. of decomposition 81°. Analogously, O,O-diphenyl-S-o-carboxyphenyldiazonium dithiophosphate and its meta analogue were obtained.

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USSR

UDC 547.26·118

GRITSAY, N. I., VIL'DANOVA, G. G., BOKALO, G. A., ZEMLYANSKIY,
N. I., Lvov State University imeni Ivan Franko, Lvov, Ministry
of Higher and Secondary Specialized Education Ukrainian SSR

"Arylation Reaction of O,O-Diphenyl-S-alkenedithiophosphonic Acid"

Abstract: O,O-Diphenyl-S-alkenedithiophosphates (I) were obtained
by reacting O,O-diphenyldithiophosphate with alkenyl bromide in
acetone. To carry out the arylation reaction, a solution of dia-
zonium salt prepared from 0.016 g-mole of an amine, 4.8 ml con-
centrated HCl and 0.016 g-mole of sodium nitrite was added drop-
wise to a cooled mixture of (I) and 0.57 g CuCl$_2$.2 H$_2$O in 50 ml
acetone. Nitrogen evolution was observed at 3-4° in the case of the
addition of p-nitrophenyl, at 16-18° with p-tolyl, and at 23° with
phenyl diazonium chloride. After 2-3 hrs, when nitrogen evolution
stopped, the oil was extracted with ether, the solvent evaporated,
and the residue vacuum distilled. The product was chromatographed
over alumina.
1/1

USSR

UDC   523.164.83

MATYUGOV, S. S., YAKOVLEV, O. S., GRICAYCHUK, B. V.

"The Energy Spectrum of Radio Waves Emitted by a Lunar Satellite in the
Case of Reflection From the Surface of the Moon"

Moscow, Radiotekhnika i Elektronika, Vol 26, No 9, Sep 71, pp 1848-1853

Abstract: The authors study the energy spectra of radio waves trans-
mitted by lunar satellites, reflected by the lunar surface and received
on Earth. Relations are found for spectral shapes as determined by the
position of the satellite and the degree of unevenness of the reflecting
surface. The results of the "Luna-14" program of studying the spectra
of scattered radio waves are described. The spectra of radio waves
scattered by different regions of the moon are discussed, as well as
the relationship between the type of spectrum and surface relief. A
comparison of experimental data on various wave bands shows that the
width of the energy spectrum is directly proportional to the signal
frequency. These results show that minor irregularities in the reflect-
ing surface play a minor role in shaping the spectrum for wavelengths

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MATYUGOV, S. S. et al., Radiotekhnika i Elektronika, No 9, 1971, pp 1545-1553

greater than 10 cm. On shorter wavelengths, the theory requires some refinements to account for surface irregularities. Numerical analysis showed a complex relationship between the shape of the energy spectra and the satellite position and surface unevenness. Experimental data show that the spectrum of scattered radio waves is sensitive to the degree of surface roughness in the region which is important for scattering in the direction of the Earth. The rms values of the slopes of irregularities on the moon differ strongly for various regions.

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USSR   UDC 621.791.754.011:669.715

CHERNYSH, V. P., SYROVATKA, V. V., Kiev Polytechnic ' Institute, GRITSENKO,
A. F., RZHANOV, B. P., Dnepropetrovsk

"Structure and Properties of Seam Metal in AMg6 Alloy Welded with Electro-
magnetic Mixing"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 72, pp 16-19.

Abstract: An aluminum alloy was welded by argon-arc welding using a tungsten
electrode at a rate of 10 m/hr. Mixing was achieved by an axial discrete
magnetic field by a coil attached to the welder. Electromagnetic mixing of
the welding bath was found to produce a finer primary structure and complete
suppression of zones of columnar crystals. The increased fineness of the
structure was accompanied by an increase in total length of crystal boundaries
by more than a factor of 3. The orientation of the structure was decreased
from 28% to 21%. The mobile state of the arc during mixing helps to intensi-
fy removal of the oxide film from the bath, decreasing the porosity of the
welded seams. The use of the electromagnetic mixing method helps to increase
the yield of defect-free joints by more than 4 times. Induction of the con-
trolled magnetic field has a decisive influence on the results of mixing.
The reversing frequency influences primarily the surface relief of the seam.
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GRITSENKO, A. N., YERMAKOVA, Z. I., ZHURAVLEV, S. V., VIKHLYAYEV, Yu. I.,
and KLYGUL', T. A., Institute of Pharmacology of the USSR Academy of
Medical Sciences Moscow

"Synthesis in the Phenthiazine Series.   XXXI.   10-γ-Alkylaminopropyl and
10-β-Alkylaminopropionyl Derivatives of Substituted Phenthiazines"

Abstract: A study was made of the synthesis of a series of 10-γ-alkylaminopro-
pyl and 10-β-alkylaminopropionyl derivatives of 1-nitro, 4-nitro, 1-bromo and
1,3-dibromophenthiazines, and their pharmacological characteristics were com-
pared. In order to obtain the aminoalkyl chain in position 10 of the phenthia-
zine, γ-dimethylaminopropylchloride and N-methyl-N'-(γ-chloropropyl)piperazine
were used. The 10-(β-chloropropionyl) derivatives were obtained by interaction
of the phenthiazine with β-chloropropionylchloride. All the investigated com-
pounds had a clear sedative effect and were active with respect to all tests.
The piperazinyl derivatives were, as a rule, more active than the compounds
with dialkylaminoalkyl substitutions in position 10. Halogenation of the
phenthiazine ring with respect to positions 1, 3 and 4 leads to weakening of
the activity of the compounds by comparison with the unsubstituted analogs and
with compounds having similar substitutions in position 2. Halogenation with
1/2

USSR

GRITSENKO, A. N., et al., Khimiko Farmatsevticheskiy Zhurnal, Vol 5, No 7, July 1971, pp 10-14

respect to position 2 is the optimal version for activity of the compounds. Formation of the ethers with respect to position 2 leads to lowered activity. The mechanisms of these effects are discussed.

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1/2   012   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--DERIVATIVES OF IMIDAZO, 4,5,1,KL, PHENOTHIAZINE -U-

AUTHOR-(03)-GRITSENKO, A.N., YERMAKOVA, Z.I., ZHURAVLEV, S.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,395
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTRY, TOVARNYE ZNAKI, 1970 47
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, IMIDAZOLE, ORGANIC SULFUR COMPOUND, ORGANIC
   AZINE COMPOUND, AMINE, FORMIC ACID, ACETIC ACID, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0853   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136287
                       UNCLASSIFIED

CIRC ACCESSION NO--AA0136287
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   THE TITLE COMPDS. ARE PREPD. BY
  TREATING L,AMINOPHENOTHIAZINE WITH FORMIC OR TRIFLUORACETIC ACID AT
  100-20DEGREES.   FACILITY: INSTITUT FARMAKOLOGII I KHIMIOTERAPII
  AKADEMII MEDITSINSKIKH NAUK SSSR.

UNCLASSIFIED

TITLE--PSYCHOTROPIC 10-2- DIETHYLAMINO
· PROPIONYL-2-TRIFLUOROMETHYLPHENOTHIAZINE HYDROCHLORIDE -U-

AUTHOR-(05)-ZHURAVLEV, S.V., GRITSENKO, A.N., VIKHLYAEV, YU.I., KLYGUL,
   T.A., ULYANOVA, O.V.

COUNTRY OF INFO--USSR

SOURCE--BRIT. 1,191,800

DATE PUBLISHED--13MAY70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PATENT, TRANQUILIZER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0073   STEP NO--UK/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0127700
                       UNCLASSIFIED

2/2   008   UNCLASSIFIED   PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AA0127700
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPD. (I), HAVING
    PSYCHOTROPIC PROPERTIES, WAS PREPD. BY TREATMENT OF 2
    TRIFLUOROMETHYLPHENOTHIAZINE WITH CLCH SUB2 CH SUB2 COCL, AND CONVERTING
    THE RESULTING 10 (BETA CHLOROPROPIONYL) 2 TRIFLUOROMETHYLPHENOTHIAZINE
    WITH NHET SUB2 INTO I.   FACILITY: INSTITUTE OF PHARMACOLOGY AND
    CHEMOTHERAPY, ACADEMY OF MEDICAL SCIENCES, U.S.S.R.

                        UNCLASSIFIED

1/2   018   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--EFFECT OF POLYACRYLAMIDE ON THE SOLUBILITY OF AMMONIUM POLY
   PHOSPHATES -U-
AUTHOR-(03)-BEGLOV, V.M., BUDKOV, V.A., GRITSENKO, L.P.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(2), 29-31

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMER, ACRYLAMIDE, SOLUBILITY, AMMONIUM PHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0925   STEP NO--UR/0291/70/014/002/0029/0031

CIRC ACCESSION NO--AP0137953
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0137953
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AQ. POLYACRYLAMIDE (I) HAS ADDED
   TO POWD. AMMONIUM POLYPHOSPHATES (II) OF 0.5-2.5 MM GRAIN SIZE, OBTAINED
   BY NEUTRALIZATION OF PERPHOSPHORIC ACID WITHGASEOUS NH SUB3 WITHOUT OR
   WITH 1.5 WT. PERCENT LIGNIN ADDED, AND ITS EFFECT ON THE DISSOLN. RATE
   IN H SUB2 O AT ROOM TEMP. WAS STUDIED. HIGH I CONCNS. RETARDED THE
   DISSOLN. RATE. MIXTS. OF I WITH II HAD A HIGH COAGULATING CAPACITY.
      FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC: 621.315.592

BEREZHNOY, V. N. and GRITSENKO, N. I.

"Transients in Films of Some Organic Semiconductors"

Leningrad, Fizika i tekhnika poluprovodnikov, Vol 4, No 11, 1970, pp 2032-2034

Abstract: This paper describes transients the authors observed in copper phthalocyanine and stilbene crystal organic semiconductor films, in which diffusion processes such as those observed in inorganic semiconductors do not play an important part. Measurements of these processes were made in "sandwich" structures made by sublimation in a vacuum of 10^{-5} mm Hg of films of the substance to be investigated on a substrate of glass or quartz. The thickness of the films of the two substances were 0.5-5 μm and 10-30 μm respectively, their resistivity being 10^{13} and 10^{15} ohms cm. Electrodes of Ag, Ni, Cu, Zn, and Al were used for the first material, and Ni and Ag for the second. Curves were given for the relaxation dark currents and the steady-state volt-ampere characteristics for both types of semiconductor film. The authors express their gratitude to M. V. Kurik for his interest in the work.

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USSR   UDC 539.23:541.139

ANDRYUSHCHENKO, F. K., OREKHOVA, V. V., and GRITSENKO, T. I., Khar'kov
Polytechnical Institute Imeni V. I. Lenin

"Preparation of Thin Magnetic Films With Special Properties by an
Electrochemical Method"

Abstract: Since magnetic properties of the films obtained by the electro-
chemical method are affected by their composition, thickness, conditions of
the electrolysis, acidity of the electrolytes and by other parameters, a
study was undertaken of the effects of these parameters on thin magnetic
films. It was established that lowering the coercive force to 3e and
improvement in the anisotropy of these films may be achieved by depositing
them in pulsed mode using intersticial layers of copper, and a brass base.
The use of the pulsed mode may promote directional orientation of the
crystals and by keeping them in a fine crystalline form improve their
magnetic properties.

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USSR   UDC 621.357.7:669.15'24(088.8)

ANDRYUSHCHENKO, F. K., ORDUKOVA, V. V., CRITSENKO, T. I., TRUKOVA, A. I.

"Method of Electrolytic Deposition of a Nickel-Iron Alloy"

USSR Author's Certificate No 300098, filed 22 Oct 68, published 26 Aug 71 (from
RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L316P)

Translation: A procedure for electrolytic deposition of Ni-Fe alloy has been
patented. It is distinguished by the fact that in order to obtain the magnetic
anisotropy of thin films, the process is realized with the application of a
square-pulse direct current with a period of 11-20 seconds, a pulse time of
10-15 seconds, an off-duty factor of 1.1-1.5 and an amplitude of 3-5 a
The films obtained are characterized by magnetic anisotropy with a coercive
force of 4-6 oersteds and an anisotropy field of 3-7 oersteds. The minimum
values of the coercive force and the anisotropy field (2-4 oersteds) are achieved
for a pulse period of 15 seconds (the pulse time was 10 seconds, the off-duty
factor was 1.5) and an amplitude of 4 a/dm^2 during the electrolysis process
with D_c 1 a/dm^2.

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Thin Films

USSR   UDC 669.24.018.9(088.8)

ANDRYUSHCHENKO, F. K.,OREKHOVA, V. V., GRITSENKO, T. I., TRUNOVA, A. I.

"Method of Electrolytic Precipitation of Nickel-Iron Alloy"

USSR Author's Certificate No 308098, filed 22 Oct 68, published 26 Aug 71 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G317P)

Translation: This is a supplement to the primary patent (RZh--Metallurgiya, 1969, 5G402P). In order to obtain magnetic anisotropy of thin films, this process is realized with deposition on a direct current of square pulses with an 11-20 second period, a pulse time of 10-15 seconds, an off-duty factor of 1.1-1.5, and an amplitude of 3-5 amps/decimeter^2. The alloy films obtained are characterized by magnetic anisotropy with a coercive force of 4-6 oersteds and an anisotropy field of 3-7 oersteds.

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1/2   028   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--PREPARATION OF MAGNETIC ALLOYS WITH SPECIAL PROPERTIES BY AN
   ELECTROCHEMICAL METHOD -U-
AUTHOR-(03)-ANDRYUSHCHENKO, F.K., OREKHOVA, V.V., GRITSENKO, T.L.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 573-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MAGNETIC ALLOY, ELECTROCHEMISTRY, IRON ALLOY, NICKEL
   CONTAINING ALLOY, ELECTRODEPOSITION, METAL FILM, ELECTROLYTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0739   STEP NO--UR/0080/70/043/003/0573/0577

CIRC ACCESSION NO--AP0111432
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0111932
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE COMPN. OF
    NI-FE ALLOY FILMS, DEPOSITED FROM K SUB4 P SUB2 O SUB7 AND NA SALICYLATE
    SOLN., ON THE ELECTROLYTE CONCN. AT VARIOUS C.DS. WAS ESTABLISHED.   THE
    EFFECTS OF COMPLEX FORMING METALS (NI AND FE) AND LIGANDS WERE STUDIED.
    NA SALICYLATE IS CHOSEN BECAUSE OF ITS INSTABILITY CONSTS., 3.24 TIMES
    10 PRIME NEGATIVE28 AND 4.9 TIMES 10 PRIME NEGATIVE36. THE FE
    SALICYLATE COMPLEXES ARE SO STRONG THAT ELECTRODEPOSITION OF FE CAN BE
    ATTAINED ONLY BE CODEPOSITION WITH NI. FOR NI, K SUB4 P SUB2 O SUB7 IS
    MORE SUITABLE THAN THE SALICYLATE LIGANDS. INCREASE OF THE COMPLEXING
    METAL CONCN. SHIFTS THE POLARIZATION CURVES TOWARDS MORE ELECTROPOS.
    ELECTRODE POTENTIAL VALUES, WHICH CAUSES THE ENRICHMENT OF THE ALLOY
    WITH THAT METAL WHOSE COMPN. IN THE SOLN. INCREASES. AT THE SAME TIME,
    AN INCREASE OF THE LIGAND CONCN. SHIFTS THE DEPOSITION POTENTIAL TOWARDS
    MORE ELECTRONEG. VALUES. AN OPTIMUM ELECTROLYTE COMPN. IS NICL SUB2
    TIMES 6H SUB2 O 70, FECL SUB3 TIMES 6H SUB2 O 2-3, K SUB4 P SUB2 O SUB7
    3.30, NA SALICYLATE 20 G-1. AT 0.5-4 A-DM PRIME2, MIRRORLIKE NI-FE
    ALLOY FILMS ARE DEPOSITED FROM THIS ELECTROLYTE. ELECTROLYSIS DURATION
    OF 1.5-3 MIN PROVIDES A NI CONTENT IN THE DEPOSIT OF 80-83.5PERCENT, AND
    THE FILM THICKNESS IS INCREASED FROM 300 TO 800 ANGSTROM.

UNCLASSIFIED

USSR

UDC:629.7.036.3.001.4

GRITSENKO, V.I., GUBAYDULIN, N.L. and KLIMENKO, YU. N.

"Thermobarometric Installation for Testing Gas Turbine Engines"

Omsk, Sb. Vopr. Glubokago Okhlazhdeniya (Symbosium on Deep Cooling Problems), 1972, pp 56-58 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, 1973, Abstract No 3.34.92)

Translation: A scheme of a thermobarometric installation for testing gas turbine engines and systems is presented. The installation consists of a chamber for heating the air supplied by a compressor, a heat exchanger, an ejector sucking gases from the cell and the turboexpander made out of a small size gas turbine. The purpose of the turboexpander is to cool the air for tests simulating high-altitude conditions. Test results of the installation are given. 2 illustrations. 3 references. Authors resume.

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USSR

UDC 681.325.65

GRITSENKO, V. V., State All-Union Central Scientific Research Institute of Integrated Automation

"Integer Code Converter With Built-In Check"

USSR Author's Certificate No 308427, Cl. G 06 f 5/02, filed 23 Feb 70, published 14 Sep 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B190P)

Translation: The invention is related to the field of computer technology and is designed to convert binary-decimal integer codes into binary codes and vice versa with increased reliability. There are well-known number code converters which operate according to the shift and correction method. To increase reliability, they use the operation of inversion, which makes the device more complex and increases the probability of a pseudoerror during the inversion. The proposed device differs as follows: The output of the binary-decimal shift register is connected through an inverter to an input of the OR element, whose other input is connected to the numerical input of the device. The output of the OR element is connected through the first inhibit circuit to an input of a calculator modulo $A = 2^k - 5$, $k \geqslant 3$, whose other input is connected to the clock pulse line, which is also connected through the second inhibit circuit

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USSR

GRITSENKO, V. M., USSR Author's Certificate No 308427

to the input of the binary-decimal shift register, while the control inputs of
the inhibit circuits are connected to the inhibit pulse line. This makes it
possible to expand the functional capabilities of the device and increase con-
version reliability.

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UDC 681.32.31

USSR

GRITSEVSKIY, P. M., and SOLOMYANNIK, V. P., Central Scientific-Research Institute of Railroad Transportation

"System of Duplex Control Digital Computers"

USSR Authors' Certificate No 311272, Cl. F06f 15/50, G 06 f 11/00, filed 27 Apr 67, published 11 Oct 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'- naya Tekhnika, No 5, May 72, Abstract No 5B100P)

Translation: Systems of duplex digital computers are known which contain control digital computers, registers, readout control units, readiness-of-result tag units, and logic circuits. However, these systems are of low reliability. In the proposed system, outputs of the output register of the first computer are connected to the first inputs of the output gates of the first machine and to the inputs of the input register of the second computer. The outputs of the output register of the second machine are connected to the first inputs of the output gates of the second machine and to the inputs of the input register of the first machine. The output of the readout control unit of the first machine is connected to the second inputs of the output gates of the second machine and to the control input of the input register of the second machine. The output of the readout control unit of the second machine is connected to the second

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USSR

GRITSEVSKIY, P. M., et al., USSR Authors' Certificate No 311272

inputs of the output gates of the first machine. The output of the readiness-
of-result tag unit of the first machine is connected to the input of the input
register of the second machine, while the output of the readiness-of-result
tag unit of the second machine is connected to the input of the input register
of the first machine. This makes it possible to increase system reliability,
as well as to reduce the time to search for defective external registers.

2/2   .

TITLE--EJECTIN OF SLOW EXCITED HELIUM ATOMS AND MOLECULES FROM A CARBON
   FILM PRODUCED BY BOMBARDING SOLID TARGETS WITH FAST HELIUM IONS -U-

AUTHOR-(04)-GRITSINA, V.V., KIYAN, T.S., KOVAL, A.G., FOGEL, YA.M.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
   NR 5, PP 1491-1496

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ION BOMBARDMENT, HELIUM, ATOM, MOLECULE, LUMINESCENT MATERIAL,
   CARBON, LUMINESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0009   STEP NO--UR/0056/70/058/005/1491/1496

CIRC ACCESSION NO--AP0127659
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0127659

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LUMINESCENT SLOW HELIUM ATOMS AND
MOLECULES WERE OBSERVED BY BOMBARDING VARIOUS SOLID TARGETS WITH 20 KEV
HE PRIME POSITIVE IONS. THIS LUMINESCENCE IS DUE TO THE SLOW HELIUM
ATOMS AND MOLECULES EJECTED FROM THE CARBON FILM PRODUCED ON THE TARGET
SURFACE AS A RESULT OF INTERACTION BETWEEN THE BOMBARDING BEAM IONS AND
HYDROCARBON MOLECULS ADSORBED AT THE SURFACE. SOME CONSIDERATIONS
PERTAINING TO THE LUMINESCENCE MECHANISM OF THE HELIUM ATOMS AND
MOLECULES ARE PRESENTED.   FACILITY: KHAR'KOVSKIY GOSUDARSTVENNYY
UNIVERSITET IM. A. M. GOR'KOGO.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--04DEC70

1/2   019

TITLE--CORE MIXTURES BASED ON PHENOL FORMALDEHYDE RESINS FOR PRODUCING
   CORES IN HOT BOXES --U-

AUTHOR-(02)-BOBRYAKOV, G.I., GRITSKEVICH, L.F.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZVOD. 1970, (5), 6-8

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CLAY, SAND, PHENOL FORMALDEHYDE RESIN, UREA, TENSILE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/B08 STEP NO--UR/0128/70/000/005/0006/0008

CIRC ACCESSION NO--AP0140249

UNCLASSIFIED

CIRC ACCESSION NO--AP0140249
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING CORE MIXTS. WERE
DEVELOPED BY USING THE LUBERETSK SAND CONTG. 0.45 WT. PERCENT CLAY
MATERIAL. IT IS RECOMMENDED TO USE SAND CONTG. LESS THAN OR EQUAL TO
0.5PERCENT CLAY MATERIAL, BECAUSE THE CLAY CONSIDERALBY DECRASED THE DRY
STRENGTY OF THE CORE MIXTS. THE ADDN. OF UREA (5 AND 10PERCENT OF THE
WT. OF PHENOL ALCS.) DELAYED CONSIDERABLY THE DECOMPN. OF PHENOL ALCS.
WHEN 0.8PERCENT UREA WAS ADDED TO THE CORE MIXT. THE HARDENING RATE WAS
INCREASED, WHILE THE TENSILE STRENGTH IMPROVED. COMPNS. OF CORE MIXTS.
ARE GIVEN.

UNCLASSIFIED

1/2   007   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--STABILIZATION OF THE VISCOSE FIBER PARAMETERS DURING FORMING -U-

AUTHOR-(04)-REZNIK, K.YA., GAYDUKOV, K.A., GRITSKOV, I.V., BUTYAGIN, P.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (2), 49-52

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--RAYON, TEXTILE INDUSTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0102   STEP NO--UR/0183/70/000/002/0049/0052

CIRC ACCESSION NO--AP0132395
                     UNCLASSIFIED

CIRC ACCESSION NO--AP0132395
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   IN SPINNING RAYON FIBERS
   DIFFERENCES ARE OBSD. IN FIBER QUALITY FROM 1 SPINNERET HEAD TO ANOTHER.
     THESE DIFFERENCES ARE CAUSED BY DIFFERENCES IN THE RESIDENCE TIMES OF
   VISCOSE IN THE CONDUITS OF THE SPINNING MACHINE.   A RECIRCULATION METHOD
   IS PROPOSED AND SUPPORTED BY MATH. DEDUCTIONS FOR EQUALIZING THE
   RESIDENCE TIMES.   FACILITY: KIEV FILIAL, VNIIV, KIEV, USSR.

UNCLASSIFIED

USSR   UDC: 621.3.049.75

TURUKIN, G. M., GRITSKOVA, V. V., SHUMILOV, A. S., OSTROZHINSKIY, A. V.,
VESELOVSKAYA, V. A.

"A Method of Metallizing Multilayered Printed-Circuit Boards"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 5, Feb 71, Author's Certificate No 293311, Division H, filed 4 Aug 69,
published 15 Jan 71, p 182

Translation: This Author's Certificate introduces a method of metallizing
printed-circuit boards consisting of several layers. The procedure is based
on sequential chemical and galvanic copper-coating of holes. As a distinguish-
ing feature of the patent, reliable interlayer connections are provided by
galvanic build-up of copper on the end faces of the contact platforms in
the holes of the inner layers before electrochemical metallizing of the holes.
Priority dates from 13 July 1967.

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Acc. Nr: *AP0044617*   Ref. Code: *UR0497*

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,
                Nr 1 , pp 119 -126

AFFECTION OF THE LIVER AND BILE DUCTS IN SYSTEMIC
SCLERODERMIA

Aprosina, Z. G.; Guseva, N. G.;
Potekayeva, M. A.; Gritsman, N. N.

On the basis of examinations of 180 patients with systemic sclerodermia the authors revealed the character and incidence of clinical signs of involvement of the liver bile ducts; in 30 cases (in 19 — according to autopsy data, in 11 — according to biopsy of the liver) morphological changes in the liver were studied.

REEL/FRAME
19771294

USSR

UDC 51:621.391

GRITSYK, V. V.

"Average Quantity of Received Information for a Class of Ternary Codes"

Otbor i peredacha inform. Resp. mezhved. sb. (Data Gathering and Transmission -- Republic Interdepartmental Collection of Works), 1972, vyp. 34, pp 27-31 (from RZh-Matematika, No 6, Jun 73, Abstract No 6V459 by E. GABIDULIN)

Translation: The following problem is apparently considered: From an ensemble of input messages a certain subensemble is isolated in which a uniform distribution is given. Then the average mutual information between the input and output of a stationary, symmetric memoryless channel is calculated. The article considers the case where a certain ternary code is used as the subensemble. The purposes of such a study are not clear.

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USSR

GRITSYK, V. V. and MIKHAYLOVSKIY, V. N.

"Estimate of the Quality of Information Transmission"

Otsenka Kachestva Peredachi Informatsii [English Version Above], Kiev, Nauk.
Dumka Press, 1973, 106 pp (Translated from Referativnyy Zhurnal Kibernetika,
No 9, 1973, Abstract No 9V491).

Translation: This monograph contains results of the development of the basic
problems related with the information evaluation of the effectiveness of
methods of information transmission. The initial consideration in this work
was that the basic task of the selection of a method of information trans-
mission is to provide the maximum effectivenss (economy) with fixed accuracy
and reliability of transmission.
     The first chapter presents a brief critical review of the primary indi-
cators for evaluation of the qualityof methods and system of information
transmission, in particular those used in subsequent chapters.
     Chapter Two presents the necessary mathematical apparatus from the
information theory of Shannon. Original results are presented concerning the
determination of formulas for the mean quantity of information received per
code word for binary correcting codes with various modes of their utilization.
Certain asymptotic estimates of the mean quantity of information received per
code word are given, when the reliability of information transmission

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USSR

Gritsyk, V. V. and Mikhaylovskiy, V. N., Otsenka Kachestva Peredachi Infor-
matsii, Kiev, Nauk. Dumka Press, 1973, 106 pp.

approaches unity. The concenpt of the expanded spectrum of a code is intro-
duced and certain results are presented concerning the possibility of correc-
tion of errors by correcting codes.

Chapter Three studies an important class of correcting codes -- group
(line) codes. New methods are presented for production of formulas for the
mean quantity of information received per code word for group codes, which
essentially simplify the general method of production of formulas. General
expressions are produced (depending on the length of a code word n) for group
codes with minimum distance d = 2, improved Hamming codes with min $\omega(v_i)$ = 3,
quasi-improved Hamming codes with min $\omega(v_i)$ = 4.

Chapter Four presents a generalization of a number of results produced
in the earlier chapters to nonbinary codes. A general method (algorithm) is
presented for production of formulas for the mean quantity of information
received per code word using computers. A general formula is produced for the
mean quantity of information received per code word for known trinary
Meshkovskiy codes. New data are presented concerning conversions as a result
of which equivalent codes are produced in relationship to the information
received. The lower boundary is concluded for the mean quantity of information
received per code word, code power $N = m^k$, where m is the base (alphabet) of
the letters: k > 0.

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USSR

Gritsyk, V. V. and Mikhaylovskiy, V. N., Otsenka Kachestva Peredachi Infor-
matsii, Kiev, Nauk. Dumka Press, 1973, 106 pp.

Chapter Five presents results of estimation of the quality of certain
methods of information transmission from the standpoint of the generalized
information indicator -- the function of specific content and the information
reproduction quality indicator. A general method is given for information
evaluation of the effectiveness of various methods of information transmis-
sion.

USSR

GRITSYK, V. V.

"Mean Quantity of Information Received for One Class of Trinary Codes"

Otbor i Peredacha Inform. Resp. Mezhved. Sb. [Collection and Transmission of
Information. Republic Interdepartmental Collection], 1972, No 34, pp 27-31
(Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No
6V459, by E. Gabidulin).

Translation: The following problem is apparently studied. From a set of
input messages, a certain subset is separated, over which the even distribu-
tion is assigned. Further, the mean mutual information between the input
and output of a stable symmetrical channel without memory is calculated.
This article studies the case when a certain trinary code is used as the
subset. The goals of the analysis are not clear.

1/1   - 52 -

. USSR

GRITSYNA, V. V., KIYAN, T. S., KOVAL', A. G., FOGEL', Ya. M., SERYUGIN,
A. L., MARTYNOV, I. S., Khar'kov State University imeni A. M. Gor'kiy

"Concerning the Mechanism of Luminescence of Polymer Films Which Arises
as They are Being Formed Under Ion-Beam Bombardment of Solids"

Abstract: On the basis of experimental results, the authors suggest a
new mechanism for luminescence of polymer films forming on a solid as a
result of ion-beam dissociation of hydrocarbon molecules adsorbed on the
surface of a bombarded target. It is shown that luminescence of atoms
and molecules of helium and neon which arises during bombardment of metal
targets by ions of He^+ or Ne^+ is emitted by particles of the corresponding
gas located inside hollow spherolites formed during growth of the film
under bombardment. The influence of the film temperature on the intensity
of the emitted luminescence as well as the change in the nature and in-
tensity of luminescence when there is a change in bombarding beams is
explained on the basis of the proposed mechanism of luminescence of poly-
mer films. A mechanism is also proposed for luminescence of polymer films
1/2

USSR

GRITSYNA, V. V. et al., ZhETF, Vol 64, No 1, Jan 73, pp 207-216

formed on the surface of dielectric targets by ion-beam bombardment. It
is assumed that luminescence in this case arises as a result of the exci-
tation of gas which has accumulated in the cavities between the substrate
and the polymer film where it is peeling off.

2/2

USSR   UDC 51:621.391

GRITSYK, V. V., MIKHAYLOVSKIY, V. N.

"The Quality of Reproduction of Information Transmitted by Correcting Codes"

Otbor i Peredacha Inform. Resp. Mezhved. sb. [Selection and Transmission of Information, Republic Interdepartmental Collection], No 25, 1970, pp 3-9, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V455).

NO ABSTRACT.

USSR

UDC 51:621.391

GRITSYK, V. V., MIKHAYLOVSKIY, V. N.

"Estimating the Quality of Reproduction of Information Transmitted by Group Codes"

Otbor i Peredacha Inform. Resp. Mezhved. sb. [Selection and Transmission of Information, Republic Interdepartmental Collection], No 25, 1970, pp 9-18, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V456).

NO ABSTRACT.

USSR

UDC 537.534+535.337

GRITSYNA, V. V., KIYAN, T. S., GOUTTE, R., KOVAL, A. G., and FOGEL', YA. M.,
(R. Goutte affiliated with the National Institute of Applied Sciences, Lyons,
France)

"Effect of Nonradiative Transitions on the Emission Spectrum of Excited Particles
Knocked Out of Solid Targets by Fast Argon Ions"

Abstract: The effect of the resonance ionization process on the spectrum emitted
by excited particles knocked out of solid targets - a metal (Cu), a semiconductor
(Si), and a dielectric (Al_2O_3)-by 20 kev Ar^+ ions was studied. Results show that
resonance processes of excitation loss occurring when excited particles fly off
the surface of a solid have a considerable effect on the emission spectrum of
particles knocked out of its surface by an ion beam. It is suggested that the
location of energy levels of a solid with a known energy spectrum can be pre-
dicted on the basis of the radiation of the emission spectrum of particles
knocked out of the surface of the solid by an ion beam.

1/1

- 109 -

GRITSKIN, V. I., KIYAN, T. S., FOGEL', Ya. M., KOVAL', A. G., and
ALINOVSKIY, Iu. A.

"Glow of Slow Neon Particles Appearing in the Bombardment of Car-
bon Films by a Beam of Fast Neon Ions"

Abstract: This is the third paper published by the first four of
the authors named above on the same subject. In the two earlier
papers (ZhETF, Letters to the Editor. 9, 1969, p 212; 58, No. 5,
1970) the authors reported discovery of a glow from slow helium
atoms and molecules resulting from prolonged bombardment of hard
targets of Ni, Pd, Pt, Ta, and C by He$^+$ ions. This paper reports
experiments conducted with carbon films as the targets for beams
of N$^+$, Ar$^+$, and Ne$^+$, with a beam density of about 30 μA/cm^2 and
an ion energy of about 20 kev. When the N$^+$ ions were used, no
glow was registered for the slow nitrogen particles. There was
also no glow for slow argon particles upon bombardment of the
film with Ar$^+$ ions. For the Ne particles, however, there was a
glow, and the sole illustration in this short article shows the
spectrum of this glow with a beam density of 10 μA.
1/1

1/2   019   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--EXPRESSION OF PRETHROMBOTIC STATE IN ATHEROSCLEROSIS AND RHEUMATISM
-U-
AUTHOR--GRITSYUK, A.I.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 24-28

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD COAGULATION, ATHEROSCLEROSIS, RHEUMATIC DISEASE,
    FIBRINOLYSIS, THROMBOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1709   STEP NO--UR/0475/70/000/004/0024/0028

CIRC ACCESSION NO--AP0129079
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0129079
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   IT IS SHOWN THAT A TOTAL ANALYSIS
OF HYPER HYPOCOAGULATION TENDENCIES OF THE BLOOD, INCREASE AND DECREASE
OF FIBRINOLYSIS (THROMBOPHILIA INDEX) IS OF HELP IN MORE ACCURATE
DIAGNOSIS OF PRETHROMBOTIC STATES IN PATIENTS WITH ATHEROSCLEROSIS AND
RHEUMATISM.   FOUR DEGREES OF EXPRESSION OF THE PRETHROMBOTIC STATE ARE
SINGLED OUT.   THE PRETHROMBOTIC STATE AS JUDGED BY THESE CRITERIA WAS
NOT FOUND IN 43.5PERCENT OF PATIENTS WITH ATHEROSCLEROSIS AND 38PERCENT
WITH RHEUMATISM.   IN 27PERCENT OF ATHEROSCLEROSIS AND IN 29PERCENT OF
RHEUMATISM THE HIGHEST (IV-TH) DEGREE OF PRETHROMBOTIC STATE WAS FOUND.
WITH THE SAME FREQUENCY IT IS OBSERVED IN THE ACUTE PERIOD OF
THROMBOSIS.

UNCLASSIFIED

1/2   010   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--1,MERCAPTOIMIDAZO 4,5,1,N,M PHENOTHIAZINE -U-

AUTHOR-(03)-GRITTSENKO, A.N., YERMAKOVA, Z.I., ZHURAVLEV, S.V.

COUNTRY OF INFO--USSR

SOURCE--USSR 265,111
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MERCAPTAN, IMIDAZOLE, ORGANIC SULFUR COMPOUND, ORGANIC AZINE
   COMPOUND, CHEMICAL PATENT, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1458   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128857
                         UNCLASSIFIED

CIRC ACCESSION NO--AA0128857
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPD. IS PREPD. BY
    TREATING 1,AMINOPHENOTHAZINE WITH CS SUB2 IN THE PRESENCE OF AN AQ.
    SOLN. OF KOH AND ALC. OR POWD. S.   FACILITY: INSTITUTE OF
    PHARMACOLOGY AND CHEMOTHERAPY, ACADEMY OF MEDICINAL SCIENCES, USSR.

UNCLASSIFIED

Agriculture

USSR   UDC 595.754:614.449(470.44)

GRIVANOV, K. P., and ANTONENKO, O. P., Scientific Research Institute for Agriculture of the Southeast, Saratov

"Biological Bases for Integrated Control of the Stink-Bug (Eurygaster integriceps) in the Saratov District"

Abstract: In Saratov, spring wheat suffers the most from infestation by stink-bugs. The danger is worst when infestation occurs during the tillering stage, since the plant cannot compensate for the destruction of the main stalk by strengthening the development of the side stems. The stink-bug population varies and depends primarily on weather conditions and secondarily on the species and characteristics of the plant. Chemical treatment with organophosphorous insecticides is very harmful to the natural enemies of the stink-bug, especially during the spring. The primary natural enemies of the stink-bug are the egg-eaters of the order hymenoptera, the parasitic Phasiidae, the predators on larvae and eggs consisting of 10 species of the family Carabidae, the two genuses Formicidae, the species Staphylinidae, Anthicidae, the larva of Chrysopa, spiders of the families Lycosidae, Argiopidae, Brassidae, Thomisidae, and beetles of the genuses Pterostichus, Dolichus, and Harpalus. Chemical
1/2

USSR

GRIVANOV, K. P., and ANTONENKO, O. P., Zoologicheskiy Zhurnal, Vol 50, No 10, 1971, pp 1487-1496

treatment in mid-May does not harm the egg-eaters still in a pupate stage, but treatment only two weeks later, when they begin to fly, significantly decreases their number. Similarly, treatment that coincides with the summer imago lowers the population of Phasiidae. Thus spring chemical treatment should be conducted at the larval stage so as to increase the effectiveness of the entomophages of the stink-bug.

2/2

- 1 -

USSR   UDC 621.357.384.034.3

GOLISHEVY, D. P., VARENIVEN, G. P., TEYEL'BAUM, S. D., LEBEDEV, YU. E.,
GRIVANOVA, S. M.

"Estimating the Thermodynamic Efficiency of Cycles of Thermally Dissociating
Substances"

Dissotsiiruyushch. gazy kak teploobmenniki rab. tela energ. ustanovok -- V sb.
(Dissociating Gases as Heat Transfer Agents and the Working Media of Power
Plants -- Collection of Works), Minsk, Nauka i tekhn. Press, 1971, pp 52-66
(from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5G107)

Translation: Various types of cycles in dissociating substances are investi-
gated and analyzed. Analysis is construed that out of the gas cycles in nitro-
gen tetroxide the most useful is the one cycle with subcritical compression.
The efficiency of the simplest regenerative gas cycle and the gas-liquid
cycles in N2O4 is higher than in nondissociating gases and low-boiling working
mediums. It is possible to utilize the thermally dissociating working medium
in multipurpose devices, in particular, in devices for generating electric
power and fresh water. There are 4 illustrations, 2 tables, and a 4-entry
bibliography.

1/1

Acc. Nr.: _AP0051511_   Ref. Code: _UR0114_

USSR   UDC 621.224.001.5:620.193.16

YU.A. GRIVNIN, YU.U. EDEL'

"Cavitational Erosion in Hydraulic Turbines"

Leningrad, Energomashinostroyeniye (Power Machinery Con-
struction), 1970, No 1, pp 5-8

Translation:

        The status of scientific research studies in the
field of cavitational erosion is discussed, basic results
of some studies are presented, and they are evaluated from
the viewpoint of applicability to hydraulic turbines.
Results are presented of studies made at the Central Boiler
and Turbine Institute of cavitational erosion on profiles
of the hydraulic turbine type and it is shown that the
erosion process is significantly different for different
forms of cavitation. Five figures, 32 references.

                              Reel/Frame
1/1   ⟨illegible⟩

1/2   022   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--STRUCTURE FORMATION OF LIQUIDS AT THE SURFACE OF A SOLID -U-

AUTHOR--GRIVTSOV, A.G.

CCUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(4), 868-71

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FLUID STRUCTURE, SURFACE PROPERTY, COMPUTER CALCULATION, SOLID
   STATE, SPECIFIC DENSITY

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0894   STEP NO--UR/0020/70/190/004/0868/0871

CIRC ACCESSION NO--AT0112058
                        UNCLASSIFIED

CIRC ACCESSION NO--AT0112058
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. QUAL. CALCN. (BY COMPUTER) OF THE
    D. OF GASES AND LIQS. TO THE SURFACE ARE DISCUSSED. THE LOCAL D. OF AR
    CLOSE TO THE SURFACE OF VARIOUS SOLIDS IS GRAPHED. THE METHOD CAN BE
    APPLIED TO THE STUDY OF THE STRUCTURE OF A TRANSITION LAYER BETWEEN A
    GAS AND A LIQ.   FACILITY: INST. FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR   UDC 537.311.33:546.28/.289

VAYKHBROT, E.I., GRIZHKO, V.M., GRISHAYEV, I.A., NOSOV, V.M.

"Transients In Germanium And Silicon During Irradiation By The Momentum Of
Electrons Of Linear Accelerator With 35 Mev Energy"

V sb. Radiatsion. fiz. nemets. kristallov (Radiation Physics Of Nonmetal
Crystals--Collection Of Works), Minsk, Nauka i tekhn., 1970, pp 57-66 (from
RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B24)

Translation: The paper investigates transients in Ge and Si, originating under
the influence of the momentum of electrons with 35 Mev energy. The specimens
were prepared from plates of Ge and Si and during the investigation were placed
in a uniform field of electrons. The thickness of the specimens was selected so
that generation of charge carriers might take place uniformly with respect to
all the space. It is shown that dependence of the amplitude of additional con-
duction on the flux density is nonlinear. During analysis of transients it is
necessary to take into account the time change of the mobility because of the
additional mechanism for scattering by the ionized atoms of the semiconductor
and the decrease of the life time of the nonequilibrium charge carriers. 7 ill.
8 ref. Summary.

1/1

1/2   023   UNCLASSIFIED   -   PROCESSING DATE--27NOV70
TITLE--SESQUISULFIDES OF RARE EARTH ELEMENTS AND YTTRIUM -U-

AUTHOR-(02)-GRIZIK, A.A., BORODULENKO, G.P.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,090.
REFERENCE--OTKRYIAYA, IZOBRET, PROM OBRAZTSY, TOVARNYE ZNAKI 1970, 47(10),
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--RARE EARTH METAL, YTTRIUM, METALLURGIC RESEARCH FACILITY,
   SULFIDE, CYANIDE, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1440   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126971
                         UNCLASSIFIED

CIRC ACCESSION NO--AA0126971
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THT TITLE COMPDS. ARE PREPD. BY
SULFIDIZATION OF 0-CONTG. RARE EARTH AND Y OXIDES WITH AN NH SUB4 SCN
MELT IN A MOLAR RELATION OF 1:6-1:12 AT 170-250DEGREES IN A CURRENT OF
INERT GAS. SUBSEQUENT RARE EARTH AND Y THIOCYANATES ARE BROKEN DOWN AT
400-800DEGREES IN A SULFIDIZING MEDIUM.   FACILITY:
GOSUDARSTVENNYY NAUCHNO-ISSLEDOVATEL'SKIY I PROYEKTNYY INSTITUT
REDKOMETALLICHESKOY PROMYSHLENNOSTI.

UNCLASSIFIED

USSR

GROBOV, V. A., LEBEDEV, D. V., Mekhanika tverdogo tela, No. 2,
Mar/Apr 72, pp 34-39

action of a controlling moment M_z acting relative to the Oz axis;

(4) the angle between the OY and Oy axes determined from the condition
$\cos \delta = \cos \alpha \cos \beta$ is small, where α, β and γ are the Krylov angles
determined by the mutual position of the two coordinate systems. It
is shown that the presence of centrifugal moments of inertia leads to
displacement of the equilibrium position relative to the coordinate
origin by certain angles, analytical expressions for which are given.

2/2

USSR

GROBOV, V. A., KOTSYUBA, A. V.

"The Jacobi Method in the Problem of Nonstationary Motion Around the Center of Mass of an Uncontrolled Body Entering the Atmosphere With Hypersonic Velocity"

Translation: The problem of the nonstationary motion of a rotating solid upon entry into the atmosphere with hypersonic velocity is solved. Weight asymmetry and the nonlinearity of aerodynamic and damping moments are taken into account. A system of differential equations is given for the unperturbed and perturbed motions in the form of canonical Hamilton equations along with expressions for the kinetic energy, generalized forces and other quantities entering into the equations of motion. A solution is given for the equation of the unperturbed motion and the sequence for obtaining the solution of the unperturbed motion is described. 7 ref. P. I. Zheludev.

1/1

- 16 -

USSR   UDC 531.352.396

GROBOV, V. A., and SIVENYUK, V. V.

"Theory of the Vibration-Rotation Movements of a Free Solid, Carrying Elastic Elements"

Kiev, Prikladnaya Mekhanika, Vol 8, No 2, Feb 72, pp 3-8

Abstract: The interrelated rotatory movements of a solid and the flexural oscillations of elastic rods, connected with it, are dealt with. Asymptotic methods are used for solving the problem. An analysis is made of the non-resonance regime of motion of the system, and of the case where one of the frequencies of the elastic oscillations is equal to the frequency of free precession. Conditions are found, at which the elastic oscillations of the elastic elements attached to the carrying solid may be used for quenching nutation. The proposed method for solving the problem, using the asymptotic method of N. M. Krylov, N. N. Bogolyubov, and Yu. A. Mitropol'skiy is very promising from the point of view of taking into account various kinds of small conservative and nonconservative disturbances acting upon a free system. Two figures, 4 references.

1/1

USSR

UDC 629.196.2-20

GROBOV, V. A. (Kiev)

"Concerning the Theory of Passive Systems for Damping the Nutation of Rotation-Stabilized Orbital Objects"

Kiev, Prikladnaya Mekhanika, No 1, 1971, pp 10-17

Abstract: The principle of passive damping consists in the fact that un-desirable movements of a space vehicle put into motion simple mechanical or hydraulic devices (dampers), which dissipate the energy of motion of the object and return it to simple rotation. The article analyzes damping of the nutations of rotating satellites by means of dampers with a transla-tionally moving mass and pendulum dampers. Here account it taken of the non-linearity of the damper oscillation and the nonsteady rotation of the satel-lites, due to the interrelationship of the oscillatory and the rotatory movements. A numerical example is presented, which illustrates the effective-ness which with the nutations are quenched. Four figures, 8 bibliographic entries.

1/1

USSR   UDC 621.317.4:621.318.12

ARTEMOVA, M. A., BAGALEY, O. Yu., GROBOVITSKIY, M. I., ZINGERMAN, V. I.

"Installation for Determination of Static Magnetic Characteristics of Speci-
mens of Magnetically Hard Materials"

Izmeritel'naya Tekhnika, No 11, 1971, pp 65-67.

ABSTRACT: A description is presented of a new installation, designed for
certification testing of specimens of magnetically hard materials. It allows
determination of demagnetization curves of specimens consisting of rectangular
parallelepipeds with cross sections of 0.5 to 9 cm^2, from 15 to 100 mm in
length. The coercive force of the specimens tested should be not over 200 ka/m
(for 15 mm specimens) or 80 ka/m (for 100 mm specimens). The design and con-
struction of the new installation eliminate the preliminary calibration opera-
tions, the system itself being suitable as a standard source for certification
of standard specimens. The installation uses a measurement method allowing the
advantages of pulse magnetization and induction measurement of magnetic induc-
tion to be combined. A photograph is presented of the device, plus a descrip-
tion of its primary characteristics.

1/1

USSR

KARAMZINA, N. M., GRODETSKAYA, N. S., PAVLENKO, G. I.

"Interrelation at the Stage of Primary Reactions of the Organism of Processes
of Adaptation and Chemical Interaction and Processes of Compensation of Sub-
sequently Resulting Pathological Changes"

Sb. "Farmakol. Khimioterapevt. sredstva. Toksikol. Probl. toksikol, (Pharma-
cology of Chemically Therapeutic Substances. Toxicology. Problems in
Toxicology--Collection of Works), T. 5 (Itogi nauki i tekhn. VINITI AN SSSR
■ Results in Science and Technology of the All-Union Institute of Scientific
and Technical Information, Academy of Sciences of the USSR), 1973, pp 145-
162 (from Referativnyy Zhurnal, 30F, Biologicheskaya Khimiya, No 18, 25
September 1973, abstract No 18F1747)

Translation: The primary reactions of animals to the action of Hg, CS_2,
benzene, CCl_4, morpholine, dimethylformamide, ethylene oxide, bromo-
acetopropyl acetate, ethyleneimine, $POCl_3$, NaF, triphthazine, and mono-
allylamine and their effects on the function of the thyroid, adrenal, and
pituitary glands were studied to determine the characteristic state of
the nonspecific regulatory systems of the organism. The results permitted
evaluation of the hygienically significant changes due to the action of
different chemical compounds.
1/1

USSR

UDC 621.315.21

GRODNEV, I. I.

"Prospects for Development of Underground Communications Lines"

Moscow, Elektrosvyaz', No 5, 1971, pp 37-45

Abstract: A study is made of trends in the development of the production and introduction of communications cables, coaxial mains, long distance symmetric high-frequency cables, intrazonal communications cables, farm communications, cables, municipal telephone cables and cable shields and sheathing. Eleven basic areas of scientific research are listed.

    Specifications are given for various types of cables, and comparative data are presented for the Soviet Union, Japan, England, France, the USA, the Federal Republic of Germany, and other Western and Eastern European countries.

1/1

- 32 -

Power

USSR   UDC   621.36

GRODKO, V. A. and MARKAR'YAN, B. N.

"Thermodynamics of Systems for Direct Thermal to Electrical Energy Conversion, Part 2"

Moscow, Izvestiya Akademii Nauk SSSR--Energetika i transport, No. 3, 1971, pp 107-116

Abstract: In the first installment of this series, published in this same journal (No. 4, 1970) the assumption was made that a system for direct conversion of thermal into electrical energy is a combination of two electrodes, one "hot," the other "cold." The bounds of these electrodes are points of maximum and minimum electrical potential. This second of the series of articles is devoted to an examination of the generalized thermodynamic cycle and the derivation of the volt-ampere equations of the system. The authors find that these equations, expressed in terms of the temperature and potential, are valid whether or not the absence of the simultaneous variation in temperature and potential in the branches of the system is assumed. An examination of the relationship between the the different thermal-emf conversion coefficients found by various researchers leads to the opinion that the coefficient is limited by cases in which both branches of the direct conversion system
1/2

USSR

GRODKO, V. A., et al, Izvestiya Akademii Nauk SSSR--Energetika i transport, No. 3, 1971, pp 107-116

are formed by an electron gas with the distribution functions of a single type of electron. Two diagrams of the ideal cycle of the system are given.

2/2

- 111 -

GRODNEV, I.I.

CAROL

So: JPRS 60578
20 NOVEMBER 73

GUIDE TO BUILDING COMMUNICATION CABLE INSTALLATIONS

[Excerpts from a book by D. A. Baron, B. I. Gershman, I. Grodnev, S. I. Anzel', G. Sh. Mizheritskiy, and I. D. Frishman; Moscow, Spravochnik stroitel'ya kabel'nykh sooruzheniy svyazi, Russian, Izdatel'stvo Svyazi, 1968, pp. 105-100].

1.4. Main-line High-Frequency Symmetrical Cables

Types of Cables

For main-line communications, the following types of cables are used: MKS, with cordel-styroflex insulation in a lead casing; MKSA, with cordel-styroflex insulation in an aluminum casing; and MK, with cordel-paper insulation in a lead casing.

These cables are fabricated in a spiral quad, and the diameter of the wires is 1.2 mm, the capacitance 1x4, 4x4 and 7x4.

MKS Cables with Cordel-Styroflex Insulation in a lead casing
(GOST (All-Union State Standard) 9046-59)

Main-line MKS cables with cordel-styroflex insulation are intended for main cable lines, multiplexed with K-60 high-frequency apparatus in the spectrum of frequencies up to 252 kilohertz with a remote power supply of up to 750 volts direct current and KRR multiplexing, in the spectrum up to 552 kilohertz. The cables are produced with 1.4 or 7 high-frequency quads. Aside from this, 4x4 cables may have five signal wires, and 7x4 cables 6 signal wires. The diameter of the copper current-conducting wires 0.9 mm. Depending upon the type of protective covers, the cables are marked as follows: MKSG, in a lead casing, bare; MKSB, armored with steel ribbons; MKSBV, armored with steel ribbons, lead casing protected by a polyvinyl chloride hose or ribbons; MKSK, armored with round wires; MKSKV, armored with round wires, lead casing protected by polyvinyl chloride hose or ribbons;

- 1 -

GRODSHTEYN, A. Ye.

AEC/RNC   TRANS-009-73

A. Ye. Grodshteyn. Kinetics of the Absorption of Hydrogen by Titanium. [Kinetika po Gloshcheniya Vodoroda Titanom].
Izv. Sibirsk Otd. an SSSR, No. 1, 43-48 (1962).

*Went to press Feb. 2, 1961.
Information of the Siberian Branch of Acad. Sc. USSR, 1962.

Translated from Russian by the Ralph McElroy Co., Custom Division
2102 Rio Grande, Austin, Texas 78702 USA

USSR   UDC: 537.226.33

GRODSHTEYN, A. Ye., MANAKOVA, N. A., NIKITINA, T. A., SVIRIDOVA, T. P.

"A Ferroelectric"

USSR Author's Certificate No 283344, filed 2 Jun 69, published 22 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V472 P)

Translation: A ferroelectric is proposed which is based on oxides of
barium, manganese and titanium dioxide. As a distinguishing feature of
the patent, the thermal stability of the material is improved by adding
aluminum oxide to the charge and taking the initial components in the
following proportions (in percent by weight): barium oxide 33-31, manganese
oxide, 18-17, titanium dioxide 48-46, and aluminum oxide 1-6.

1/1

AA0038812

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, *3-70*

238676 SURFACE PURIFICATION of mounts of electric vacuum devices by ion bombardment can be improved by exhausting the devices, depending on size, at a rate of 0.001-500 l/sec. and by applying a voltage of 100-3000 V to the electrodes while the pressure drops from 100 to 0.1 Torr. An oxidation of the electrodes can be avoided in the volatilisation of the fatty and salty impurities by a suitable selection of the voltage. 15.7.67. as 1172683/26-25. A E.GRODSHTEIN et alia. (14.7.69.) Bul.10310.3.69. Class 21g. Int.Cl HO1j

AUTHORS: Grodshteyn. A. Ye.; Kashnikov. N. G.; Kirsanov, N. D.; and Yuvenskaya. G. A.

19740022

USSR

UDC 669.29:620.183

TIRASPOL'SKIY, V. I., KOTLYAR, A. A., GRODSKIY, E. A., MIRONOVA, O. YA., RATNER, L. A., and SHAPARO, N. B.

"Thin Structure and Properties of Deformed and Annealed Tungsten Single Crystals"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 175-179

Abstract: Structural changes occurring in tungsten single crystals during hot rolling and subsequent annealing were investigated, using the methods of X-ray diffraction microscopy and by measuring the microhardness and residual electrical resistance at the liquid nitrogen temperature ($78°K$). The experimental technique and procedure for producing tungsten single crystals are described. X-ray photographs are presented of single crystal structure before and after rolling, and also of samples strained at 30% and annealed at various temperatures (1200 to 2400°). They show that the dislocation density inside the subgrains increases with strain, and at $\varepsilon = 25\%$ the subgrain boundaries are no longer discernible. This state is conditionally characterized as prefragmentary. At $\varepsilon = 27\%$ a qualitatively new fragmentary state occurs. The substructure and properties of deformed (up to 30%) tungsten single crystals after annealing at various temperatures are studied.
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TIRASPOL'SKIY, V. I., et al, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye,
Vol 29, No 1, Jan 70, pp 175-179

The variation of the residual electrical resistance and microhardness of samples
deformed at 25 and 30% and annealed at 900° are presented in graphs and analyzed.
The results show that hot rolling with 30% strain produces a prefragmentary or
fragmentary substructure, depending on strain. The step-by-step annealing of
single crystals with a prefragmentary substructure induces only relaxation and
polygonalization. In the case of a fragmentary substructure it also induces re-
crystallization, which leads to a total softening and a perfect structure.
Orig. art. has: 5 figures.

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TITLE--FINE STRUCTURE AND PROPERTIES OF DEFORMED AND ANNEALED TUNGSTEN
   SINGLE CRYSTALS -U-
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   O.YA., RATNER, L.A.
COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1) 175-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--TUNGSTEN, METAL SINGLE CRYSTAL, Z RAY DIFFRACTION, ZONE
   MELTING, METAL DEFORMATION, WARM ROLLING, MICROHARDNESS, RESISTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0700   STEP NO--UR/0126/70/029/001/0175/0179

CIRC ACCESSION NO--AP0105676
                       UNCLASSIFIED

UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRUCTURAL CHANGES DURING ROLLING AND SUBSEQUENT ANNEALING OF W SINGLE CRYSTALS WERE STUDIED BY X RAY DIFFRACTION IN COMBINATION WITH MICROHARDNESS MEASUREMENTS, AS WELL AS BY ELEC. RESISTIVITY MEASUREMENTS AT LIQ. N TEMP. INVESTIGATED WERE W SINGLE CRYSTALS PREPD. BY ELECTRON ARC ZONE MELTING AND CONTG. A HIGH CONCN. (0.05PERCENT) OF INTERSTITIAL IMPURITIES, ESP. C. PRIOR TO DEFORMATION, THE SAMPLES WERE ANNEALED AT 1500DEGREES FOR 5 HR TO REMOVE CASTING STRESSES. AFTER THIS THEY WERE ROLLED AT 200DEGREES (WARM ROLLING) BY 5, 8, 12, 16, 25, 27, OR 30PERCENT. THE PLANE AND THE DIRECTION OF ROLLING WERE CHOSEN ARBITRARILY, AND IN THE GIVEN CASE CORRESPONDED TO APPROX. (123) (110). SAMPLES DEFORMED BY 12-30PERCENT WERE THEN ANNEALED SUCCESSIVELY AT 900, 1200, 1500, 1800, AND 2400DEGREES FOR 1 HR. AT EACH STAGE OF THE TREATMENT, THE SUBSTRUCTURE OF W WAS INVESTIGATED BY X RAY DIFFRACTION (SCHULTZ METHOD), AND THE MICROHARDNESS AND ELEC. RESISTIVITY WERE MEASURED AT LIQ. N TEMP. CERTAIN PROPOSALS ARE MADE AS TO THE NATURE OF THE PROCESSES GOING ON IN W SINGLE CRYSTALS DURING COLD DEFORMATION TO 30PERCENT AND STEPWISE ANNEALING. WARM ROLLING TO 30PERCENT PRODUCES IN W SINGLE CRYSTALS A SUPERFRAGMENTED OR A FRAGMENTED SUBSTRUCTURE. STEPWISE ANNEALING OF SINGLE CRYSTALS WITH SUPERFRAGMENTED SUBSTRUCTURE PRODUCES IN THEM RECOVERY AND POLYGONIZATION, WHEREAS FOR FRAGMENTED SUBSTRUCTURE IT PRODUCES ALSO SPOT RECRYSTN., LEADING TO COMPLETE WEAKENING AND THE FORMATION OF A PERFECT STRUCTURE.

UNCLASSIFIED

USSR   UDC: 632.951:634.11

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"Effectiveness of New Compounds Against Apple Worm in the Steppe Zone of
the Ukraine"

Moscow, Khimiya v Sel'skom Khozyaystve, no 11, Nov 70, pp 23-25

Abstract: The selection of insecticides for controlling the apple worm is
a very complex task considering that the compounds must differ in type
of action (to prevent the emergence of stable populations) and, specifi-
cally, be of low toxicity to humans and warm-blooded animals. During the
period of 1966-1969 the following compounds were tested: S-9491 (iodophos)
(Switzerland); Gardona (SD-8447) (England); Sevin (G.D.R.); carbophos·
mesurol (G.D.R.); metaphos (G.D.R.); methylnitrophos; trichlorometaphos;
phosalone (France); Phthalophos (U.S.A.); cyanox (Japan); Cidial (Italy).

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